REMARKS

Support for New Claims

Support for new claim 8 can be found in original claim 1.
Support for new claim 9 can be found in original claim 2.
Support for new claims 10 and 11 can be found in original claim 2 and in the specification on page 8 lines 13 to 15.
Support for new claim 12 can be found in original claim 3.

Patentability

The Examiner rejects Claims 1 – 5 and 7 – 9 as anticipated by U.S. Patent No. 5,731,377 ("Friel"). The Examiner's use of Friel in this fashion is based on case law stating that "[i]f the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." With regard to Friel, the Examiner cites that the monomer components used in the making of Examples 3 and 7 of Friel fall within the scope of the monomer combinations described in claims 1 and 2 of the current application. The Examiner then concludes that, with regard to the examples of Friel, "the final products appear to be the same" as those resulting from claims 1 and 2 of the current application, that it would be obvious to make the final products of Friel by a different process, and that the data on pages 17 – 24 have little to no probative value in supporting an argument as to the criticality of the process.

Applicants disagree, especially with regard to the Examiner's views on the data on pages 17 – 24 of the Specification. Specifically, data in Table 4.1 (page 20) refutes the assumption that, on the basis of similarities in monomer compositions, it may be concluded that emulsion polymers made by a given process are the same as, or obvious in light of, emulsion polymers made by another process. In Table 4.1, the scrub resistance of 6 polymers made by 6 different processes, using the same monomer compositions, is compared. In the first cut measurement, performance ranges from 566 to 1065 cycles, in cut-through, performance ranges from 641 to 1224 cycles, and in 25% gone 731 to 1417

cycles. In all measures, the performance of polymers made from identical monomer mixtures are shown to vary by a factor of very nearly two. On the basis of these data, one must conclude that the nature of products of emulsion polymer processes are strongly dependent on process specifics, a fact well known to those skilled in the art. In light of these data, applicants submit that there is no basis to assume that the products of Friel are the same as those produced by the inventive process. Neither does Friel provide any motivation to the practitioner to modify his processes in manner provided by the current application. The analysis below with regard to initiator and neutralizer distribution, key aspects of the process portions of claims 1 and 2, shows that examples 3 and 7 of Friel are made by processes more similar to the comparative examples of the current application than the inventive examples.

Summary of Example 1 and Comparatives A and B of current application

Total monomer weight = 1000g = total dry polymer weight

Acid Monomer (MAA, FW = 86) = 20 g (0.23 acid equivalents, 2% by weight based on dry polymer weight)

sodium carbonate (FW=106)

	Example 1	Comparative A	Comparative B
Reactor initiator	0.78 g APS	0.78 g APS	2.72 g APS
Gradually added initiator	2.72 g APS	2.72 g APS	0.78 g APS
Reactor sodium carbonate	0.35 g	6.9 g	6.9 g
Gradually added sodium carbonate	6.55 g	0 g	0 g

Summary of Example 2 and Comparatives C and D of current application

Total monomer weight = 1000g = total dry polymer weight

Acid Monomer (MAA, FW = 86) = 20 g (0.23 acid equivalents, 2% by weight based on dry polymer weight)

sodium carbonate (FW=106)

	Example 2	Comparative C	Comparative D
Reactor initiator	0.3 g APS	0.3 g APS	1.05 g APS
Gradually added initiator	1.05 g APS	1.05 g APS	0.3 g APS

Reactor sodium carbonate	0.35 g	6.9 g	6.9 g
Gradually added sodium carbonate	6.55 g	0 g	0 g

Summary of Friel Examples 3 and 7
Total monomer weight = 1700g = total dry polymer weight
Acid Monomer (MAA, FW = 86) = 34 g (0.39 acid equivalents, 2% by weight based on dry polymer weight)
sodium carbonate (FW=106)

	Friel 3 and 7
Reactor initiator	2.6 g APS
Gradually added initiator	1.7 g APS
Reactor sodium carbonate	1.7 g
Gradually added sodium carbonate	0 g

Comparison of Initiator and Neutralizer Distribution in Friel Examples 3 and 7 vs Current Example 1 and Comparative Examples A and B

	Current Example 1	Current Comparative A	Current Comparative B	Friel Examples 3 and 7
Wt% Total Initiator (APS) based on dry polymer	0.35	0.35	0.35	0.25
% of Total initiator in reactor at start of polymerization	22.3	22.3	77.7%	60%
% equivalents neutralizer (sodium carbonate) on monoethylenically unsaturated acid monomer	57	57	57	8
% of Total neutralizer in reactor during first 10% of polym'n	5	100	100	100

Comparison of Initiator and Neutralizer Distribution in Friel Examples 3 and 7 vs Current Example 2 and Comparative Examples C and D

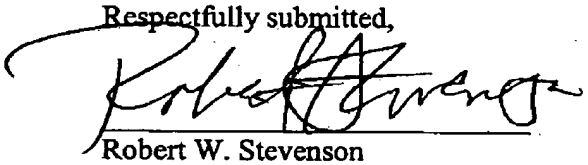
	Current Example 2	Current Comparative	Current Comparative	Friel Examples

		C	D	3 and 7
Wt% Total Initiator (APS) based on dry polymer	0.135	0.135	0.135	0.25
% of Total initiator in reactor at start of polymerization	22.2	22.2	77.8%	60%
% equivalents neutralizer (sodium carbonate) on monoethylenically unsaturated acid monomer	57	57	57	8
% of Total neutralizer in reactor during first 10% of polym'n	5	100	100	100

Applicants respectfully request that claims 1-5 and 7-9 be allowed over Friel in light of these arguments and observations. Applicants believe that the arguments above with regard to Friel address the examiner's objection to claim 6 as well. Applicants therefore request that claim 6 be allowed.

Applicant also submit a terminal disclaimer that addresses the obviousness-type double patenting rejections over U.S. Patent Applications Serial Nos. 10/410,068 and 10/040,170.

Respectfully submitted,



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